(12) **United States Patent**
Petty

(10) **Patent No.:** **US 6,782,437 B2**
(45) **Date of Patent:** **Aug. 24, 2004**

(54) **METHOD OF COMMUNICATING ON A NETWORK**

(75) Inventor: **William K. Petty**, Colorado Springs, CO (US)

(73) Assignee: **LSI Logic Corporation**, Milpitas, CA (US)

( * ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/298,343**

(22) Filed: **Nov. 14, 2002**

(65) **Prior Publication Data**

US 2003/0070017 A1 Apr. 10, 2003

**Related U.S. Application Data**

(62) Division of application No. 09/431,606, filed on Nov. 1, 1999.

(51) **Int. Cl.$^7$** .............................................. **G06F 13/00**
(52) **U.S. Cl.** ....................................... **710/100**; 710/300
(58) **Field of Search** ................................ 710/100, 300, 710/305

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,920,339 A * 4/1990 Friend et al. .......... 340/825.52

5,745,493 A * 4/1998 St. Clair ..................... 370/438
5,926,031 A * 7/1999 Wallace et al. ............... 326/30
6,233,625 B1 * 5/2001 Vander Kamp et al. ...... 710/10
RE37,613 E * 3/2002 Savage
6,438,624 B1 * 8/2002 Ku et al. ....................... 710/9

OTHER PUBLICATIONS

Small Computer System Interface—2 (SCSI—2), pp. 30–32, 40–41, 154–155, 390–391.*

* cited by examiner

*Primary Examiner*—Tim Vo
(74) *Attorney, Agent, or Firm*—Cochran, Freund and Young, LLC

(57) **ABSTRACT**

A method for communicating on a SCSI bus permits out-of-band addressing and communication for normally non-addressable devices such as SCSI expanders and terminators. The method remaps 18 SCSI data lines for out-of-band operation and manipulates no more than those data lines. Some of the data lines are remapped for purposes of out-of-band signaling and data transfers. Advantageously, manipulation of only the SCSI data lines prevents the possible response of a device on the SCSI network that does not support the out-of-band operations. Accordingly, the disclosed method is backward compatible with existing SCSI networks while allowing implementation of devices having the increased functionality of out-of-band communication.

9 Claims, 10 Drawing Sheets



| BIT | SP0 | SD7 | SD6 | SD5 | SD4 | SD3 | SD2 | SD1 | SD0 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Function | Res | Res | Res | Res | RXER | OBSL | SEND | TSTB | HSTB |

| BIT | SP1 | SD15 | SD14 | SD13 | SD12 | SD11 | SD10 | SD9 | SD8 |
|-----|-----|------|------|------|------|------|------|-----|-----|
| Function | Res | Data Byte | | | | | | | |